

Training Dietitians in Motivational Interviewing

A Pilot Study of the Effects on Dietitian and Patient Behaviour

Eileen Britt, PhD,¹ Neville M. Blampied, MA¹

Abstract

Objective: To evaluate the transfer of Motivational Interviewing (MI) skills to dietetic practice in a clinical setting, and the effect of this on patient behaviour. This involved a replication of Britt and Blampied (2010), except with dietitians providing the MI rather than nurses educators as in the earlier study. The current study, therefore, is a both a test of replication and generalisation. **Method:** Two dietitians were trained in MI and effects of this training were evaluated on both practitioner and patient behaviour when MI was delivered in a clinical setting with patients experiencing diabetes self-management difficulties. Comparisons were made between the dietitians' and participants' behaviour during baseline (standard Patient Education, n=6 participants) and after the dietitians were trained in MI (n=5 participants). Data were collated from transcripts of all sessions independently coded using the therapist and client behaviour counts from the Motivational Interviewing Skills Code to derive therapist and client behaviour counts. **Results:** MI training was effective relative to baseline performance. **Conclusions:** When trained in MI, the practitioners behaved in ways consistent with MI, and this appears to have evoked in-session behaviour from the participants consistent with emergent MI theory.

Keywords

motivational interviewing, training and coaching, health practitioners

Motivational interviewing (MI) is a collaborative conversation about change which can build and strengthen motivation for change (Rollnick & Miller, 2012). While MI comprises specific, trainable therapist behaviours (skills), MI is not just a set of techniques. The practitioner 'spirit' or way of being with the client which conveys a partnership, acceptance, compassion, and a belief in the clients own potential for positive growth is, essential for practice to be MI (Rollnick and Miller, 2012). Thus MI is a skilled conversation that requires careful training (Miller, Yahne, Moyers, Martinez & Pirritano, 2004).

Measures evaluating practitioner competence and adherence in MI have been developed. A systematic review of measures of fidelity in MI (Madson and Campbell, 2006) concludes that the Motivational Interviewing Skills Code (MISC) can be used consistently by raters to provide information useful for deconstructing the interaction between clients and practitioners. This is because, unlike other measures of MI fidelity, such as the Motivational Interviewing Treatment Integrity Scale – MITI (Moyers, Martin, Manuel, Miller & Ernst, 2010), the MISC is not only a measure of proficiency in using MI, but also includes measures of client behaviour that are predictive of client behaviour change. Full MISC coding, however, requires at least three reviews of any recording, and requires considerable training time for raters as well as time performing the actual coding (Moyers, Miller & Hendrickson, 2005).

Perhaps because of this complexity, few studies have utilised the MISC to evaluate MI training. For example, a systematic review of 27 MI

training studies (Madson, Loignon & Lane, 2009) found that only a third of the studies used more objective measures of MI fidelity, such as the MISC. Madson and colleagues' overall conclusion was that MI "training results were favorable" (p.105). Yet, only four of these studies included MI training comprising of a workshop plus feedback and coaching.

Some form of feedback and coaching post-training seems particularly important to facilitate the continued development of MI. Two studies (Brug et al.; 2007; van Eijk-Hustings, Deamen, Schaper & Vrijhof, 2011) have found that MI training can induce changes consistent with MI practice among dietitians in a clinical setting. While van Eijk-Hustings et al. did not report continued improvement in the MI skills of the dietitians in their study with ongoing coaching, Brug et al found, similar to Miller et al. (2004), that continued training opportunities after the initial two day MI workshop produced the greatest change in the dietitians' practice. Furthermore, Miller et al. (2004) found that it was only after workshop training, feedback and coaching that there was a change in the clients' in session behavior in the form of increased change talk.

The current pilot study replicated Britt and Blampied (2010) and evaluated the effect of MI training comprising a two day workshop plus ongoing feedback and coaching on both practitioner and patient in session behaviour in clinical practice with individuals experiencing difficulty with diabetes self-management. As in Britt and Blampied (2010), the study includes an analysis of the entire consultation and four sessions per practitioner-patient unit using therapist and client behaviour counts from the MISC. The MISC behaviour counts were used as they are the only measure of both practitioner and client in-session behaviour. The practitioners in the current study were dietitians, however, rather than nurse educators as in the previous study. The study, therefore, provides an evaluation of the transfer of MI skills to dietetic practice in a clinical setting, and the effect of this on client behaviour, and is both a test of replication and generalisation of the results of Britt and Blampied (2010).

¹ Department of Psychology, University of Canterbury

The study was partly funded by a Novo Nordisk Diabetes Research Grant. The authors report no conflicts of interest.

Correspondence regarding this article should be addressed to: Eileen Britt, PhD, Department of Psychology, University of Canterbury, Private Bag 4800, Christchurch 8140 New Zealand. Email: eileen.britt@canterbury.ac.nz

METHOD

Procedure

The data were collected as part of a larger study (Britt, 2008) evaluating the effectiveness of motivational enhancement therapy (MET), a four-session form of MI, in enhancing diabetes self-management. The research comprised two main parts. Part 1 evaluated the effectiveness of Patient Education (PE) for $n=6$ participants. Part 2 evaluated MET's impact in improving diabetes self-management for $n=5$ participants. As the control condition, the practitioners were asked to provide PE as per their standard practice. As such, the timing, duration and number of sessions were at their discretion. For the experimental condition, the same dietitians provided four sessions of MET (maximum of 40 minutes for each session) over eight weeks (i.e., appointments in week 1, 2, 4, and 6).

Participants

Two dietitians participated in the study, one of whom had practiced dietetics for one year following qualification, and the other for five years.

There were 11 patient participants in total—six who received PE and five who received MET. Patients (aged 16-69 years) who had been referred to dietitians at a Diabetes Centre (an outpatient service accepting referrals from primary medical practitioners throughout a major metropolitan area and adjacent rural areas), and who had been diagnosed with diabetes for at least 12 months, were approached regarding participation in the study. Patients were received as consecutive referrals rather than randomly assigned to intervention, and all continued to receive medical treatment throughout the study from their primary medical practitioner.

Random assignment was considered ethically inappropriate as it would have required participants assigned to MET to wait a considerable period of time (i.e., while the PE participants received treatment and then for the dietitians to receive training in MI) before receiving treatment. While the participants were not randomly assigned, there was no researcher bias in their selection. That is, seven consecutive referrals were approached regarding participation in the PE study, all of whom agreed to participate, but one subsequently (a female Caucasian, aged 48 years, with Type 2 diabetes) because she no longer wished to attend the Diabetes Centre.

Once the intervention phase of the PE study had been completed and the dietitians had received MI training, another seven consecutive referrals were approached regarding participation in the MET study. All agreed to participate, but two participants subsequently withdrew (a male and female, Caucasian, aged 32 and 37 years, with Type 2 diabetes) — one because she had a young child and found it difficult attending appointments, and the other after experiencing a head injury.

Patients (one Maori and the rest Caucasian) who agreed to participate in PE ranged from ages 38-69 years, were evenly divided by gender, and had Type 2 diabetes. All (two male and three female) MET participants were Caucasian, aged from 36-63 years of age, and had Type 2 diabetes. The MET participants had a longer duration since diagnosis of their diabetes (mean of 6.8 years compared to 4.6 years).

MI Training

The MI-training was the same as the training that was provided to the nurse educators in the earlier study (Britt & Blampied, 2010) but one year later. The training was conducted over two days (a total of 12 hours) by the same two trainers, both of whom were experienced in training MI, one of whom (the first author) is a member of the Motivational Interviewing Network of Trainers. The training consisted of didactic teaching, modeling by the trainers, video demonstrations, and role-playing (using everyday clinical experiences) with feedback. Additionally, the dietitians were

referred to Rollnick, Mason and Butler (1999) as a resource book, which at the time was the only MI book available which focused on the use of MI within health care settings. Considerable time was spent in training on spirit and principles of MI as in the earlier study. The other main focus of the training was on developing reflective listening skills, as well as evoking and strengthening change talk. As in the earlier study, the process of training modeled the spirit of MI, with the trainers conveying “a respect for and curiosity about the learning needs and perspectives” of the dietitians and facilitating a learning environment that had “a collaborative, exploratory feeling” (Miller & Rollnick, 2002, p.186). The training was also consistent with the guiding principles for MI training suggested by Miller and Rollnick (2002). This included listening “to the experiences, concerns and expectations” (Miller & Rollnick, 2002, p. 187) of the practitioners, expecting and tolerating disagreement and ambivalence, with focus on learning how to do MI (not just learning about it).

Post-workshop feedback and coaching was provided by the first author. All the MET sessions were recorded, reviewed, and feedback and coaching was provided by telephone.

DESIGN AND MEASURES

All intervention sessions were audio-recorded. This permitted the analysis of both dietitian and patient data obtained from the same two dietitians when providing first PE and then, subsequent to MI training, MET. In this context, dietitian (and patient) behaviour in PE constitute a baseline against which acquisition of MI skills can be compared using single case experimental design (Hersen & Barlow, 1976). Each MI session was reviewed by the first author, and feedback and coaching was given to the dietitians, to ensure that the therapeutic procedures were carried out as intended and to enhance the dietitians' MI practice, and to evaluate the effect of ongoing feedback and coaching on the practitioners' MI skills and patient behaviour.

Measures

To provide a measure of treatment integrity (Kazdin, 1992) one audio-recording for each PE and MET patient was randomly selected (29% of sessions) and reviewed by an independent rater (a clinical psychologist with experience in diabetes and MI), blind to condition, and judged as being either a PE or MET session.

All PE ($n=18$) and MET ($n=20$) audio-recordings were transcribed and coded using the Behaviour Counts section of the MISC (Miller, 2000). Transcripts of the sessions were coded, rather than the audio-recording of the sessions, as in Brug et al. (2007). Coding from transcripts facilitated consistency between coders (two post-graduate clinical psychology students, blind to condition) as each patient or dietitian utterance and its assigned code were readily available for examination. Furthermore, to maintain reliability of coding, the first author reviewed the coding of one in six (i.e. 15%) transcripts and any discrepancy in coding were discussed with the coder. ICCs suggest excellent reliability for the MISC coding with ICCs ranging from .90 (MI inconsistent responses) to .99 (MI adherent responses and total reflections) for the therapist behaviour counts, and ICCs of .99 for the client behaviour counts (change talk and resist responses). The following summary scores were then calculated:

- *Ratio of reflections to questions (R:Q).* The ratio of the number of reflective responses to the total number of questions asked.
- *Percent open questions (%OQ).* The number of open questions as the numerator, divided by the total number of questions asked (open + closed).
- *Percent complex reflections. (%CR).* The number of paraphrase + summarise reflections as the numerator, divided by the total number of reflections.

- *Percent MI-consistent responses (%MICO).* The number of MI-consistent responses as the numerator, divided by the MI-consistent plus MI-inconsistent responses. MI-consistent behaviour comprised: providing advice with permission; affirming; emphasising personal control; and raising concern with permission. MI-inconsistent behaviour comprised: advising without permission; confronting; directing; raising concern without permission; and warning.
- *Percent client change talk (%CCT).* The number of client change talk responses as the numerator, divided by the sum of client change talk responses plus client resist responses.

The practitioner summary scores and client change talk were graphed for each dietitian separately from baseline (PE) and for 10 months post-training (during MET) in which they received feedback and coaching, thus enabling visual analysis typical of single subject methodology (Hersen & Barlow, 1976). Additionally, the statistical difference between the %CCT pre- and post-training was calculated using the Mann Whitney U test of statistical significance.

RESULTS

Treatment Integrity

All sessions were correctly identified by the blind rater as either PE or MET, suggesting that the two interventions were qualitatively different.

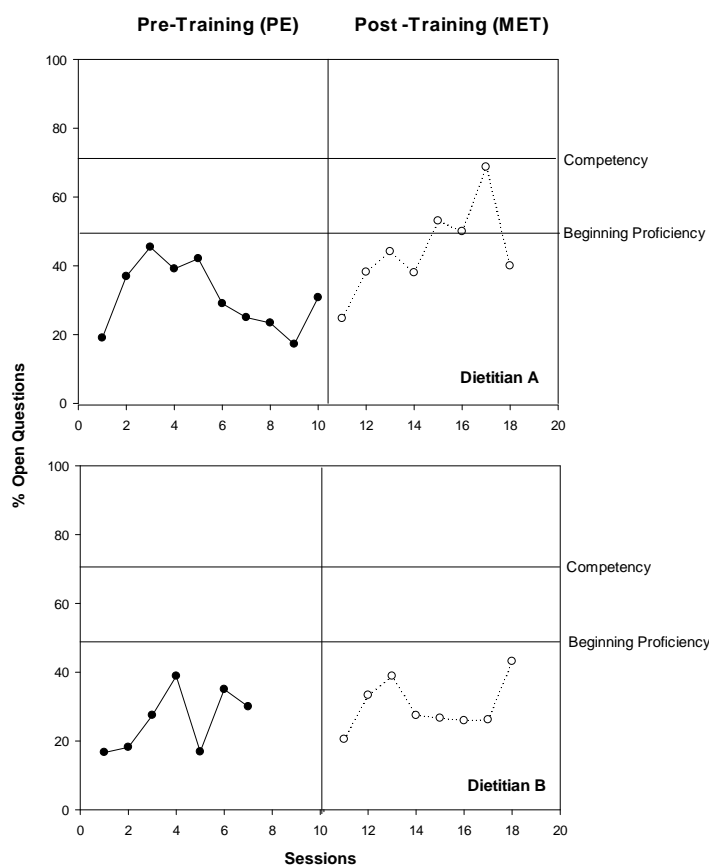


Figure 1

Percent open questions pre- and post- MI training

Practitioner Behaviour

Before training the %OQ used by both dietitians was low, falling well below beginning proficiency levels for MI (Figure 1). Immediately after MI training, dietitian A's use of open questions was similar to baseline but increased with feedback and coaching, reaching beginning proficiency and competence in later sessions. In contrast, the %OQ used by dietitian B only showed a small increase from baseline and did not reach beginning proficiency even with feedback and coaching.

Similarly, the R:Q was low pre-training for both dietitians, with a tendency to use more questions than reflections. This tendency to ask more questions appears to have been maintained post-training, with the R:Q still less than beginning proficiency (Figure 2). Dietitian B, however, appears to have increased her use of reflections post-training, demonstrating beginning proficiency in the second session post-training, although this was not maintained in subsequent sessions.

The dietitians tended to use complex reflections frequently before MI training, with on average 67% of their reflections being complex, and therefore, meeting at beginning proficiency pre-training (Figure 3). There was however, considerable variability in their use of complex reflections pre-training, ranging from 33-94%, with a standard deviation of 21%. Despite an already high level of complex reflections, both dietitians increased their use of complex reflections post-training, achieving competence in all but three sessions (dietitian B which met beginning proficiency). Additionally, there was less variability (SD = 15%) in their use of complex reflections.

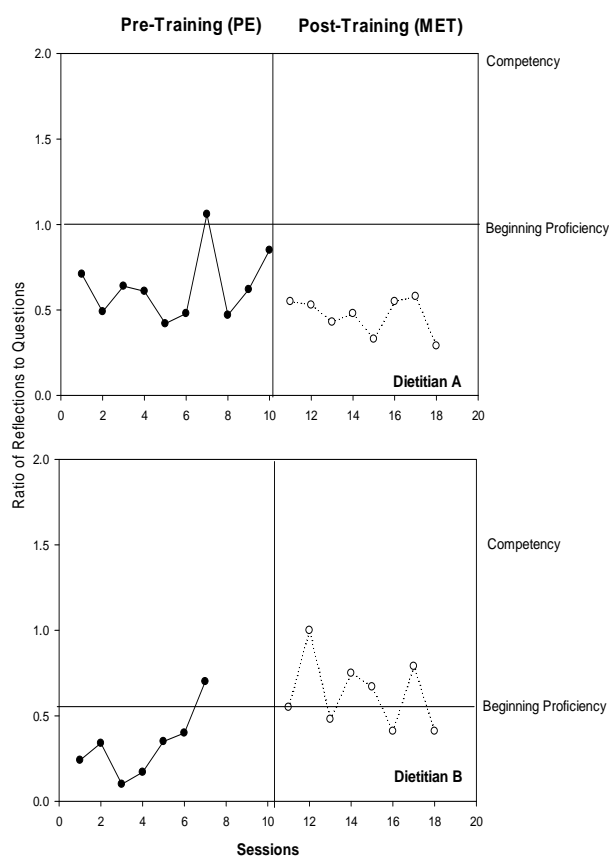


Figure 2

Ratio of reflections to questions pre- and post- MI training

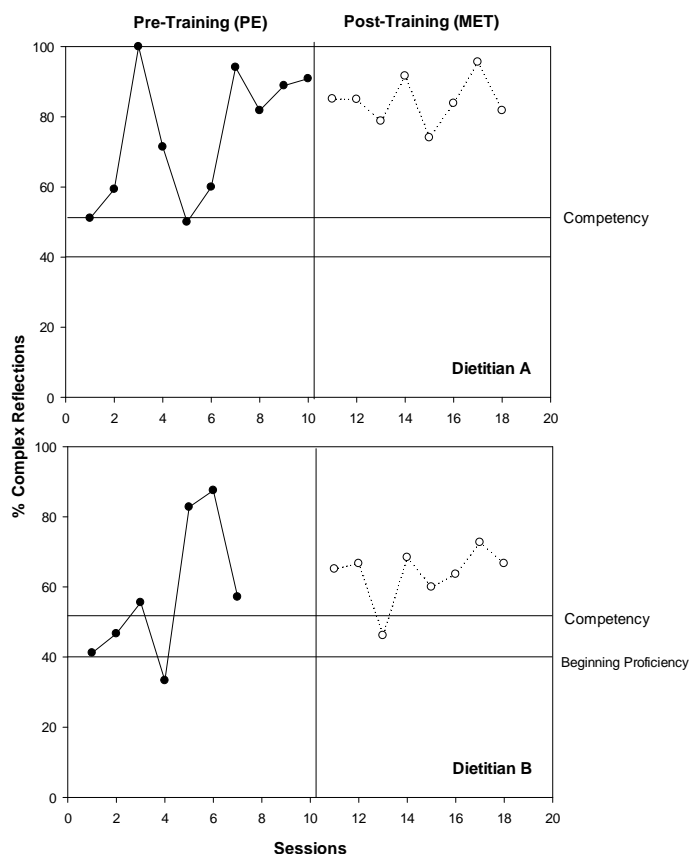


Figure 3

Percentage of complex reflections pre- and post-MI training

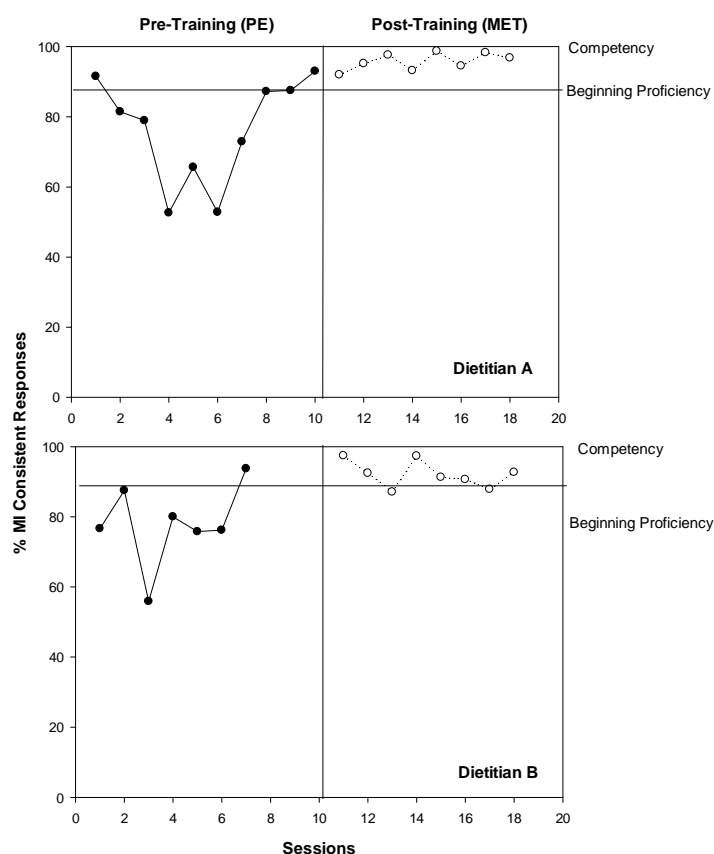


Figure 4

Percentage of MI-consistent response pre- and post-MI training

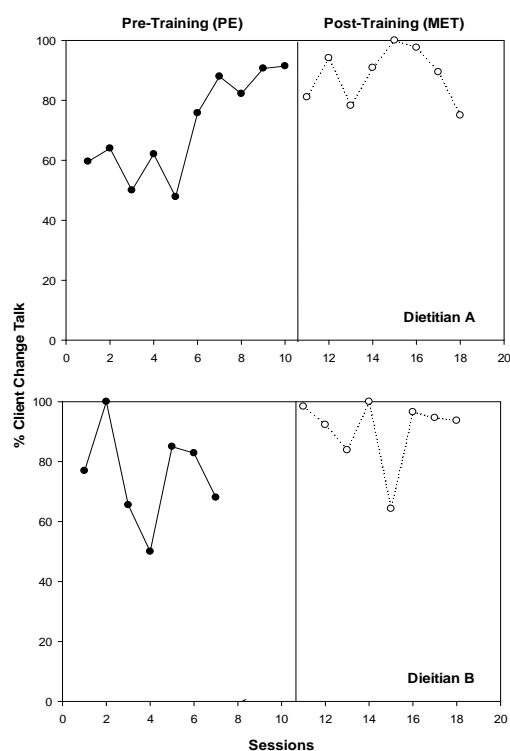


Figure 5

Percent client change talk pre- and post-MI training

Pre-training, the %MICO for both dietitians was below beginning proficiency for MI, with the exception of two sessions for dietitian A and one for dietitian B. Both dietitians achieved beginning proficiency for the %MICO immediately post-training (Figure 4), and this was maintained over time, with the exception of two sessions (dietitian B). Competence was not achieved by either dietitian. Closer examination of the types of MI-consistent behaviour exhibited by the dietitians revealed that post-training there was a decrease in the frequency of advice without permission (a third less for dietitian A and half for dietitian B) and an increase in the frequency of affirmations (double for dietitian A) and emphasizing personal control and choice (a five-fold increase for dietitian B).

Patient Behaviour

During MET there was a greater %CCT overall (MET=89%, PE=73%) which was statistically significant ($p>.004$). Pre-training the %CCT was variable (Figure 5). In contrast, post-training the %CCT was close to or above 80% for all but one session, suggesting that participants were mostly engaging in change talk and engaged in sustain talk less frequently. There was also 50% less resistance behaviour (arguing, interrupting, negating or not following) during MET compared with PE. Thus, both dietitians appear to have become more proficient at eliciting and strengthening change talk post-training, and at rolling with resistance and/or at not eliciting resistance.

DISCUSSION

Post MI training the dietitians used more complex reflections (reaching competency) and more MI consistent responses (reaching beginning proficiency). This is a similar finding to the nurse educators in Britt and Blampied (2010).

The dietitians in the current study, however, appear to have engaged in MI consistent behaviour more consistently (88% of sessions at beginning proficiency) than the nurse educators in the earlier study (69% of sessions at beginning proficiency). That is, while the nurse educators showed a statistically significant decrease in providing advice without permission and directing the participants, they still continued to engage in these behaviours. The dietitians on the other hand, whilst also engaging in less advice without permission, also appear to have increased the frequency in which they provided affirmations and emphasized personal control and choice more after MI training. That the nurse educators were less able reduce advice giving without permission and directing may in part be a function of their role of monitoring and providing assistance related to blood glucose and medication use, which can have serious implications patients' well-being.

In addition to increasing complex reflections and MI consistent behaviour, dietitian A increased her use of open questions post-training (to beginning proficiency with feedback and coaching) and dietitian B increased her use of reflections post-training (although the R:Q still did not reach criteria for beginning proficiency). These results are similar to those reported by Brug et al. (2007) and van Eijk-Hustings et al. (2011) who found that the dietitians in their study engaged in a high rate of questions, with a low R:Q. Additionally, as in the current study, in both studies the dietitians tended to use closed questions frequently. These findings may in part be due to the nature of the role of a dietitian and their sense of need for facts related to dietary intake, combined with the definition of closed questions in the MISC, which codes fact questions (such as "what did you eat for breakfast?" or "what type of milk was that?") as closed questions.

However, despite the dietitians not reaching criteria for beginning proficiency in MI, there were changes in the participants' in-session behaviour (increased client change talk) consistent with emergent MI theory. A similar finding was also reported by Britt and Blampied (2010).

This raises the question as to what level of MI skill is necessary to elicit increased change talk. The current recommended criteria for beginning proficiency and competence in MI, as stated in the MITI, are not empirically derived, but rather have been developed from expert opinion, and currently there is a lack of normative or other validity data to support them. Further research examining these criteria is recommended.

A limitation of the current study is that only two dietitians were used to evaluate the effect of MI training. More than two replications would have been desirable and would have added to the confidence that can be placed on the results and their generalisability. However, given that this study was a replication, and test of generalization, of the earlier Britt and Blampied (2010) study with nurse educators, this study lends support to the results of the earlier study and vice versa.

The results of the current study should also be treated with caution as the dietitians were self-selected as they volunteered to be involved in the research. The same results may not be achieved with dietitians who are less motivated to learn MI and apply these in their clinical practice.

Furthermore, only the behavioural counts of the MISC were used, due to the decision to code from the MISC using transcript, rather than audio, in order to increase the reliability of the coding. This meant that there was no measure of the overall 'spirit' of MI (Miller & Rollnick, 2002)

as this is captured in the first audio pass of the MISC. Some aspects of MI spirit are measured by the behaviour counts, however, and it appears from these that post-training the dietitians were, at least in some aspects behaving in ways consistent with the spirit of MI (e.g., respect for autonomy, collaboration).

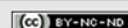
Despite these limitations, there were a number of strengths to the current study. The study included an analysis of dietitians' behaviour over time, including at baseline (pre-training), in multiple sessions with actual patients, in a clinical setting. Previous studies of MI training have tended to use simulated client actors or self-selected examples of the practitioners' best performance or only a portion of sessions of MI with actual clients. Furthermore, in the current study the coders were blind to the intervention they were coding, whereas some previous MI training studies have been criticised for having the potential for bias as coders were not blind to intervention type (Moyers et al., 2005). The current study also provides evidence that not only did the dietitians change their behaviour to be more consistent with the practice of MI, but with ongoing feedback and coaching they also maintained this change up to 10 months after the initial MI training.

In summary, the current pilot study provides evidence that dietitians who wished to learn MI, when provided with 12 hours of MI workshop training plus ongoing feedback and coaching were able to acquire MI skills (although not to a high level of proficiency) and transfer these skills to a real life clinical setting with actual patients for up to 10 months post-training. Furthermore, the patients receiving MI exhibited in-session behaviour (increased change talk) consistent with emergent MI theory.

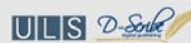
REFERENCES

- Amrhein, P.C., Miller, W.R., Yahne, C.E., Palmer, M. & Fulcher, L. (2003). Client commitment language during motivational interviewing predicts drug use outcomes. *Journal of Consulting and Clinical Psychology*, 71, 862-878.
- Britt, E. (2008). Enhancing Diabetes Self-Management: Motivational Enhancement Therapy. Manuscript submitted as partial fulfillment of the degree of Doctor of Philosophy for the Department of Psychology, University of Canterbury, NZ.
- Britt, E. & Blampied, N.M. (2010). Motivational interviewing training: A pilot study of the effects on practitioner and patient behaviour. *Behavioural and Cognitive Psychotherapy*, 38, 239-244.
- Brug, J., Spikmans, F., Aartsen, C., Boudewijn, B., Bes, R. & Ferreira, I. (2007). Training dietitians in basic motivational interviewing skills results in changes in their counseling style and in lower saturated fat intakes in their patients. *Journal of Nutrition Education and Behavior*, 39, 8-12.
- Hersen, M. & Barlow, D.H. (1976). *Single Case Experimental Designs*. NY: Pergamon Press.
- Kazdin, A.E. *Research design in clinical psychology*, 2nd ed. (1992). Needham Heights, MA: Allyn & Bacon.
- Madson, M.B. & Campbell, T.C. (2006). Measures of fidelity in motivational enhancement: A systematic review. *Journal of Substance Abuse Treatment*, 31, 67-73.
- Madson, M.B., Loinnon, A.C. & Lane, C. (2009). Training in motivational interviewing: A systematic review. *Journal of Substance Abuse Treatment*, 36, 101-109.
- Miller, W.R. *Manual for the Motivational Interviewing Skill Code - MISC* (2000). Centre on Alcoholism, Substance Abuse and Addictions. The University of New Mexico.
- Miller, W.R. & Rollnick, S.R. (2012). *Motivational interviewing: Preparing people to change behaviour* (3rd ed.). New York: The Guilford Press.

- Miller, W.R. & Rollnick, S.R. (2002). *Motivational interviewing: Preparing people to change behaviour* (2nd ed.). New York: The Guilford Press.
- Miller, W.R., Moyers, T.B., Ernst, D. & Amrhein, P. (2003). *Manual for the Motivational Interviewing Skill Coding Version 2.0*. Centre on Alcoholism, Substance Abuse and Addictions. The University of New Mexico.
- Miller, W.R., Yahne, C.E., Moyers, T.B., Martinez, J. & Pirritano, M. (2004). A randomized trial of methods to help clinicians learn motivational interviewing. *Journal of Consulting and Clinical Psychology*, 72, 1050-1062.
- Moyers, T.B., Martin, T., Manuel, J.K. & Miller W.R. & Ernst D. (2010). Motivational Interviewing Integrity Code (Version 3.1.1).
- Moyers, T.B., Miller, W.R. & Hendrickson, M.L. (2005). How does Motivational Interviewing work? Therapist interpersonal skill predicts client involvement within motivational interviewing sessions. *Journal of Consulting and Clinical Psychology*, 73, 590-598.
- Rollnick, S., Mason, P. & Butler, C. (1999). *Health Behaviour Change: A Guide for Practitioners*. Edinburgh: Churchill Livingstone.
- van Eijk-Hustings J.L., Deamen, L., Schaper, N.C., Vrijhoef, H.J.M. (2011). Implementation of motivational interviewing in a diabetes care management initiative in the Netherlands. *Patient Education and Counselling*, 34, 10-15.



This work is licensed under a [Creative Commons](https://creativecommons.org/licenses/by-nc-nd/3.0/) Attribution-NonCommercial-No Derivative Works 3.0 United States License.



This journal is published by the [University Library System](https://www.librarysystem.org/) of the [University of Pittsburgh](https://www.librarysystem.org/) as part of its [D-Scribe Digital Publishing Program](https://www.librarysystem.org/), and is cosponsored by the [Motivational Interviewing Network of Trainers](https://www.librarysystem.org/).